

A color separation beam splitter for projectors is provided, which comprises a plurality of prisms connected with each other and three optical interference filters having different wavelength ranges respectively formed on side surfaces of the plurality of prisms. The three optical interference filters include a yellow color reflective dichroic mirror, a red color reflective dichroic mirror, and a blue color reflective dichroic mirror to filter out the yellow light and provide three primary color lights with high color purity. Moreover, by reflecting a light beam twice, the number of layers of dichroic mirror can be reduced. The color purity of the light is increased after reflected twice by the dichroic mirrors. Moreover, configuration of a liquid crystal projector by use of this prism assembly as color separation unit is also disclosed.